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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/810,392	03/26/2004	Naoki Hanashima	WASH5920	8602

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EXAMINER

KIANNI, KAVEH C

ART UNIT	PAPER NUMBER
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2883

DATE MAILED: 02/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/810,392	Applicant(s) HANASHIMA ET AL.	
	Examiner Kianni C. Kaveh	Art Unit 2883	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) 11 and 12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10 is/are rejected.
- 7) ☒ Claim(s) 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Applicant's election without traverse of claims 1-10 in a paper submitted on 11/30/05 is acknowledged. The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 10 recites the limitation 'the above buffer layer' in 3rd line. There is insufficient antecedent basis for this limitation in the claim. Correction is required.

Allowable Subject Matter

Claim 9 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 9 is allowable because the prior art of record, taken alone or in combination, fails to disclose or render obvious wherein the lower cladding layer have a thickness of not less than 1 μm and not more than 5 μm in combination with the rest of the limitations of the base claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue et al. (US 5117470).

Regarding claim 1, 3, 5-8, Inoue teaches an optical waveguide (shown in at least fig. 4), comprising:

a silica substrate 9; a lower cladding layer 8 provided on the silica substrate 9; at least one core 2 provided on the lower cladding layer 8; and an upper cladding layer 7 provided on the lower cladding layer 8 and covering the core 2, in which a thermal expansion coefficient of the lower cladding layer and a thermal expansion coefficient of the upper cladding layer are substantially equal (see at least fig. 6a-e formation of Si substrate v. cladding layers made of glass compound/mixture, col. 9, last parag.-col.

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10, 1st parag., and see col. 19, 2nd parag.; wherein glass compound/mixture CTE, of two cladding layers are substantially the same and what is different here is the difference between the glass cladding layer and that of Si substrate see col. 4, lines 52-57 and col. 19, lines 7-23).

wherein a softening temperature of the upper cladding layer is lower than a softening temperature of the lower cladding layer (see at least col. 11, last parag.-col. 12, 1st parag., and col. 19 2nd parag.); wherein at least boron (B) and phosphorus (P) are added to the upper cladding layer (see col. 11, 2nd parag.)

However, Inoue does not explicitly state that the above under cladding layer is buffer layer and wherein at least germanium (Ge) is added to the lower cladding layer. Nevertheless, Inoue states dopants are used as altering thermal hysteresis phenomena of optical layer(s) such as cladding/core and thus change in refractive index of the layer (see col. 4, line 45-col. 5, line 10, and col. 10, 1st parag.) and that Ge is a dopant used as means for change in refractive index of a layer. Thus, It is obvious/well-known to those of ordinary skill in the art when the invention was made that cladding layer is/known-as buffer layer and that it would have been obvious to a person of ordinary skill in the art when then invention was made to use Ge as suggested by Inoue as a dopant for change of refractive index in cladding layer and which also extremely conventional procedure, see below prior art, procedure/use in a cladding layer and since such optical waveguide would provide guided-wave optical device in which optical coupling ratio can be controlled (col. 1, 1st parag. and col. 3, 3rd parag.).

Regarding claims 2-6 and 10, Inoue further teaches wherein a refractive index of the lower cladding layer (glass, SiO_2) is higher than a refractive index of the silica substrate Si; wherein a softening temperature of the upper cladding layer is lower than a softening temperature of the lower cladding layer (see at least col. 11, last parag.-col. 12, 1st parag., and col. 19 2nd parag.); wherein at least boron (B) and phosphorus (P) are added to the upper cladding layer (see col. 11, 2nd parag.); further comprising another lower cladding layer interposed between the silica substrate and the above lower cladding layer, a thermal expansion coefficient of the another lower cladding layer is between a thermal expansion coefficients of the silica substrate and the above lower cladding layer (shown in at least fig. 20 and 26 *and see relevant parag.*; wherein glass compound/mixture CTE, of the two cladding layers are close to each other but different than that of Si substrate and that new/lower buffer/cladding layer can be between the upper clad/buffer layer, also col. 4, lines 52-57 and col. 19, lines 7-23).

Citation of Relevant Prior Art

Prior art made of record and not relied upon is considered pertinent to applicant's disclosure. In accordance with MPEP 707.05 the following references are pertinent in rejection of this application since they provide substantially the same information disclosure as this patent does. These references are:

Suhir 6389209 teaches extremely conventional doping of cladding layer with Ge to alter its refractive index, see col. 7, lines 7-13

Childs et al. 20020170368 teaches at least claim 1

Nara et al. 20020025133 teaches at least claim 1

Kominato et al. 20020122650 teaches at least claim 1

Zhong et al. 20030044151 teaches at least claim 1

Won 20030041624 teachings of at least claim 1

Parhami et al. 20030031445 teachings of at least claim 1

Parhami et al. 6704487 teachings of at least claim 1

These references are cited herein to show the relevance of the apparatus/methods taught within these references as prior art.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to K. Cyrus Kianni whose telephone number is (571) 272-2417.

The examiner can normally be reached on Monday through Friday from 8:30 a.m. to 6:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank Font, can be reached at (571) 272-2415.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9306 (for formal communications intended for entry)

or:

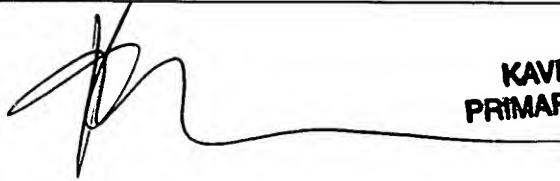
Hand delivered responses should be brought to Crystal Plaza 4, 2021 South Clark Place, Arlington, VA., Fourth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (703) 308-0956.

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K. Cyrus Kianni
Primary Patent Examiner
Group Art Unit 2883

February 3, 2006

A handwritten signature in black ink, consisting of a stylized 'K' followed by a long horizontal stroke.

**KAVEH KIANNI
PRIMARY EXAMINER**